```
Set     Items   Description
S1      15240   (PN OR PSEUDORANDOM? OR PSUEDORANDOM? OR RANDOM?)(N)(CODE?
             OR SIGNAL? OR TRANSMISSION? OR TRANSMIT?)
S2     272302   (VARY? OR CHANG? OR MODIF? OR ALTER? OR REVIS? OR INCREAS?
             OR DECREAS?)(2N)(POWER? OR STRENGTH? OR AMPLITUDE?)
S3    2297791   CRYPTO? OR ALGORITHM? OR CIPHER? OR CYPHER? OR ENCIPHER? OR
              ENCYPHER?
S4    6794928   ALGORITHM? OR FORMULA? OR CALCULAT? OR FORMULA?
S5        101   S1 AND S2
S6       2581   S1 AND S3
S7       3685   S1 AND S4
S8         24   S4 AND S5
S9         19   S5 AND S3
S10       914   (S6 OR S7) AND (VARY? OR ALTER? OR CHANG? OR MODIF? OR REV-
             IS? OR INCREAS? OR DECREAS?)
S11       262   S10 AND (PN OR PSEUDORANDOM? OR PSEUDO()RANDOM?)
S12      3868   (PN OR PSEUDORANDOM? OR PSEUDO()RANDOM?)(N)(CODE? OR SIGNA-
             L? OR TRANSMI?)
S13       231   S11 AND S12
S14        13   S2 AND S13
S15        24   S14 OR S8 OR S9
S16        18   RD (unique items)
S17        15   S16 NOT PY>2000
S18        41   S13 AND (JAMMING? OR INTERFER? OR ANTIJAM? OR ANTIINTERFER?
             OR SIGNAL()(FILTER? OR MASK?))
S19        34   RD (unique items)
S20        26   S19 NOT PY>2000
S21        23   S20 NOT S17
File   8:Ei Compendex(R) 1970-2005/Aug W3
         (c) 2005 Elsevier Eng.  Info. Inc.
File  35:Dissertation Abs Online 1861-2005/Aug
         (c) 2005 ProQuest Info&Learning
File  56:Computer and Information Systems Abstracts 1966-2005/Aug
         (c) 2005 CSA.
File  57:Electronics & Communications Abstracts 1966-2005/Aug
         (c) 2005 CSA.
File  65:Inside Conferences 1993-2005/Aug W4
         (c) 2005 BLDSC all rts. reserv.
File   2:INSPEC 1969-2005/Aug W3
         (c) 2005 Institution of Electrical Engineers
File  94:JICST-EPlus 1985-2005/Jul W1
         (c)2005 Japan Science and Tech Corp(JST)
File 111:TGG Natl.Newspaper Index(SM) 1979-2005/Aug 29
         (c) 2005 The Gale Group
File   6:NTIS 1964-2005/Aug W2
         (c) 2005 NTIS, Intl Cpyrght All Rights Res
File 144:Pascal 1973-2005/Aug W3
         (c) 2005 INIST/CNRS
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Aug W3
         (c) 2005 Inst for Sci Info
File  62:SPIN(R) 1975-2005/Jun W2
         (c) 2005 American Institute of Physics
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Jul
         (c) 2005 The HW Wilson Co.
File  95:TEME-Technology & Management 1989-2005/Jul W4
         (c) 2005 FIZ TECHNIK
```

17/5/8 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04813926 Genuine Article#: UJ695 Number of References: 9
Title: SIMILARITY METHODS IN SIGNAL-PROCESSING
Author(s): MOON TK
Corporate Source: UTAH STATE UNIV,DEPT ELECT & COMP ENGN/LOGAN//UT/84322
Journal: IEEE TRANSACTIONS ON SIGNAL PROCESSING, 1996, V44, N4 (APR), P 827-833
ISSN: 1053-587X
Language: ENGLISH Document Type: ARTICLE
Geographic Location: USA
Subfile: SciSearch; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences
Journal Subject Category: ENGINEERING, ELECTRICAL & ELECTRONIC
Abstract: A signal may contain information that is preserved by certain transformations of the signal, For example, the information phase-modulated signal is not **altered** by **amplitude** scaling of the signal. Many processing techniques have been developed to exploit such similarities. In the past, these **algorithms** have been developed in isolation without regard to common principles of invariance that tie them together, In this paper, similarity methods are presented as a unified method of designing processing **algorithms** invariant to specified transformations, These methods are based upon groups of continuous transformations known as local Lie groups and lead to a quasilinear partial differential equation. Solution of this partial differential equation specifies the form the signal processing operations must take. This form can then be applied using engineering judgment for **algorithmic** implementation, The paper presents an extended tutorial on Lie groups and similarity methods and quasilinear differential equations drawn from the mathematical literature, This is followed by several examples of signal processing interest that demonstrate that the similarity techniques may be applicable in certain kinds of signal processing problems.
Research Fronts: 94-2003 001 (WAVELET TRANSFORMS; MULTISCALE WIENER FILTER; SCALING FUNCTIONS)
94-6697 001 (DETECTION OF NON-GAUSSIAN **SIGNALS** ; **RANDOM** NUMBER GENERATOR FOR OCEAN NOISE STATISTICS; ROBUST DECONVOLUTION)
Cited References:
IEEE T INFORM THEORY, 1992, V38
IEEE T SIGNAL PROCES, 1993, V41
BLUMAN GW, 1974, V13, APPL MATH SCI
BOURBAKI N, 1975, ELEMENTS MATH LIE GR
COURANT R, 1937, V1, INTERSCIENCE
DAUBECHIES I, 1988, V41, P909, COMMUN PURE APPL MAT
GILMORE R, 1974, LIE GROUPS LIE ALGEB
LOGAN JD, 1987, APPL MATH CONT APPRO
POOR H, 1988, INTRO SIGNAL DETECTI

21/5/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03005532 E.I. Monthly No: EI9101009445
Title: Synthesis of discrete interference **-immune signals using game-theory methods.**
Author: Mal'tsev, A. D.; Chudnov, A. M.
Source: Radioelectronics and Communications Systems (English translation of Izvestiya Vysshikh Uchebnykh Zavedenii Radioelektronika) v 32 n 7 1989 p 64-65
Publication Year: 1989
CODEN: RESYA5 ISSN: 0033-7870
Language: English
Document Type: JA; (Journal Article)
Journal Announcement: 9101
Abstract: In order to create a realizable **algorithm** for the formation of **pseudorandom signals** with amplitude-phase keying, it is expedient to find the optimal distribution for the amplitudes of the subelements of the signals for a stipulated finite number of their admissible values. This problem may be represented in the form of an antagonistic game between two players which are assumed to be the signal shaper and the source which produces **interferences** that have constraints on the average power output. We consider the solution of the game. The application of amplitude keying of the subelements leads to a noticeable **increase** in reception **interference** immunity for **pseudorandom signals** . 2 Refs.
Descriptors: *SIGNAL **INTERFERENCE** --*Suppression; PROBABILITY--Game Theory; SIGNAL THEORY; AMPLITUDE MODULATION
Identifiers: **INTERFERENCE** IMMUNITY; INFORMATION **TRANSMISSION ; PSEUDORANDOM SIGNALS** ; AMPLITUDE-PHASE KEYING
Classification Codes:
711 (Electromagnetic Waves); 716 (Radar, Radio & TV Electronic Equipment); 922 (Statistical Methods)
71 (ELECTRONICS & COMMUNICATIONS); **92** (ENGINEERING MATHEMATICS)

21/5/4 (Item 4 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

01126119 E.I. Monthly No: EI8207063434 E.I. Yearly No: EI82094164
Title: INVESTIGATION OF THE STABILITY OF AN ALGORITHM **FOR** PSEUDORANDOM SIGNAL FILTERING **IN THE PRESENCE OF A SIMILAR DRIFTING** INTERFERENCE .

Author: Ponomarenko, V. P.
Source: Radio Engineering and Electronic Physics (English translation of Radiotekhnika i Elektronika) v 25 n 8 Aug 1980 p 35-42
Publication Year: 1980
CODEN: RENPAL ISSN: 0033-7889
Language: ENGLISH
Journal Announcement: 8207
Abstract: The stability is investigated of a two-circuit synchronization system realizing an optimum **algorithm** for **pseudorandom** radio **signal filtering** in the presence of a similar drifting **interference** . Dynamic characteristics are obtained which make it possible to estimate the **algorithm** stability upon **changes** in the system and **interference** parameters. 9 refs.
Descriptors: ***SIGNA L FILTERING** AND PREDICTION--*Stability; ELECTRONIC CIRCUITS--Synchronization; MATHEMATICAL MODELS
Classification Codes:
716 (Radar, Radio & TV Electronic Equipment); 731 (Automatic Control Principles); 921 (Applied Mathematics)
71 (ELECTRONICS & COMMUNICATIONS); 73 (CONTROL ENGINEERING); 92 (ENGINEERING MATHEMATICS)

21/5/9 (Item 5 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

1004314 ORDER NO: AAD85-17769
INVESTIGATION OF PRE-DETECTION SIGNAL PROCESSING OF PSEUDONOISE COMMUNICATION SIGNALS IN THE PRESENCE OF ADDITIVE WHITE GAUSSIAN NOISE AND CW AND BURSTY INTERFERENCE **COMPUTER-AIDED-DESIGN**

Author: MAYK, ISRAEL
Degree: D.EN
Year: 1985
Corporate Source/Institution: NEW JERSEY INSTITUTE OF TECHNOLOGY (0152)
Source: VOLUME 46/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 2415. 246 PAGES
Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL
Descriptor Codes: 0544

By comparison to conventional communication systems, spread-spectrum systems are known to be less affected by **interference** because of their large dimensionality in signal space. Nevertheless, significant performance degradation is experienced when large **interference** exists in a few or even one signal coordinates. In this case, **interference** reduction techniques are also known to provide additional processing gain. A novel class of pseudonoise (**PN**) invariant **algorithms** is derived to reduce the impact of **interference** and restore much of the structure of **PN signals** received in the presence of **interference** and noise. A **PN signal** received by a pre-detection signal process (PDSP) implementing a **PN** invariant **algorithm** remains unchanged at the output. When an **interference** waveform is added to the **PN signal** , most of the DC bias as well as other smooth components of the **interference** may be significantly reduced at the output of the same PDSP. If n is the longest run in the **PN** sequence of maximal length N, and R(,c) is the chip rate, it is shown that the **algorithms** work well when the **interference** is sinusoidal with a frequency deviation from the carrier up to R(,c)/N. At such a low frequency deviation, the processing gain is observed to be relatively high and independent of the phase deviation. As the frequency deviation **increases** to nR(,c)/N, the performance of the spread-spectrum system **decreases** to the level that would have been obtained in the absence of the PDSP.

21/5/12 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

6309731 INSPEC Abstract Number: B1999-09-6250F-139, C1999-09-7410F-042
Title: Spread spectrum in mobile communications. 3. Computer simulations
Author(s): Stular, M.; Tomazic, S.
Author Affiliation: Fakulteta za Elektrotehniko, Ljubljana Univ., Slovenia
Journal: Elektrotehniski Vestnik vol.66, no.3 p.222-8
Publisher: Electrotech. Soc. Slovenia,
Publication Date: 1999 Country of Publication: Slovenia
CODEN: ELVEA2 ISSN: 0013-5852
SICI: 0013-5852(1999)66:3L.222:SSMC;1-E
Material Identity Number: E040-1999-004
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P); Theoretical (T)
Abstract: In order to deepen our knowledge and understanding of spread spectrum principles, computer simulations of a direct sequence spread spectrum (DSSS) and narrow-band system (NB) were carried out. An experimental base-band DSSS system is considered. It consists of a transmitter, mobile propagation channel and receiver. In the transmitter, coding and spreading of the data signal take place. The main part of the mobile propagation channel is a FIR filter. Besides this, noise and **jamming** signals are added to the desired signal in the channel. In the receiver, the received signal is correlated with the locally generated **PN signal** and decoded afterwards. As regards decoding, there are several **alternatives** available. Namely, the DSSS principle allows us to resolve components which are mutually delayed (usually as a result of time-dispersive effects of multipath propagation) for at least chip time T/sub c/. We can therefore form a decision variable by combining more than one received component. A decoding **algorithm** on the basis of the strongest component is shown. (4 Refs)
Subfile: B C
Descriptors: digital simulation; FIR filters; mobile radio; spread spectrum communication; telecommunication computing
Identifiers: direct sequence spread spectrum; narrow-band system; mobile propagation channel; FIR filter; **jamming** signals; time-dispersive effects ; multipath propagation; decision variable; decoding **algorithm**
Class Codes: B6250F (Mobile radio systems); C7410F (Communications computing)

21/5/13 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

6212400 INSPEC Abstract Number: B1999-05-6150E-013
Title: New PN code acquisition scheme for CDMA networks with low signal-to-noise ratios
Author(s): Glisic, S.G.; Poutanen, T.J.; Wu, W.W.; Petrovic, G.V.; Stefanovic, Z.
Author Affiliation: Dept. of Electr. Eng., Oulu Univ., Finland
Journal: IEEE Transactions on Communications vol.47, no.2 p.300-10
Publisher: IEEE,
Publication Date: Feb. 1999 Country of Publication: USA
CODEN: IECMBT ISSN: 0090-6778
SICI: 0090-6778(199902)47:2L.300:CASC;1-H
Material Identity Number: I203-1999-003
U.S. Copyright Clearance Center Code: 0090-6778/99/$10.00
Document Number: S0090-6778(99)01927-3
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P); Theoretical (T)
Abstract: A new approach to **PN code** acquisition is presented and analyzed. A recirculation loop is used to improve probability of synchro cell detection P/sub D/ in each retrace of the code uncertainty region. To further improve P/sub D/ and probability of false alarm P/sub fa/ simultaneously, code diversity (a number of synchro channels in parallel) is used. This is especially effective in the channel with multiple access **interference** and near-far effect. Typical applications are networks with very low signal-to-noise ratio. Examples are code division multiple access (CDMA) LEO satellite systems experiencing high Doppler or any CDMA network where the number of users is approaching capacity limits. Even if the carrier Doppler is compensated, in any asynchronous LEO satellite network, compensation of code Doppler is not feasible. For this reason, in order to cope with code Doppler (D) and delay (tau), a **modification** based on transforming the two-dimensional uncertainty region (D, tau) into a new uncertainty region (T/sub c/, tau) will be introduced. Parameter T/sub c/ is the period of the correlation pulses at the output of a sliding correlator. When Doppler rate is present, the three-dimensional uncertainty region (D, R/sub d/, tau) is transformed into a new one (T/sub c/, R/sub t/, tau) where R/sub d/ and R/sub t/ are Doppler rate and correlation pulse period **change** rate, respectively. The main motivation for this work is to find new **algorithms** suitable for all digital receiver implementation and operation at low signal-to-noise ratios. These **algorithms** make CDMA techniques feasible for direct communication between LEO satellite and small ground-based user terminals (handsets). A comprehensive performance study of the new **PN code** acquisition system is presented and discussed. The results obtained demonstrate that, for low signal-to noise ratios, the acquisition time achieved with the new **algorithm** is one order of magnitude shorter compared with standard techniques known so far. (29 Refs)
Subfile: B
Descriptors: code division multiple access; correlation theory; diversity reception; Doppler effect; pseudonoise codes; satellite communication; spread spectrum communication; synchronisation
Identifiers: **PN code** acquisition scheme; CDMA networks; low signal-to-noise ratios; recirculation loop; probability; synchro cell detection; code uncertainty region; false alarm; code diversity; synchro channels; multiple access **interference** ; near-far effect; code division multiple access; LEO satellite systems; high Doppler; carrier Doppler; code Doppler; delay; correlation pulses; sliding correlator; Doppler rate; **algorithms** ; digital receiver; direct communication; small ground-based user terminals; handsets; performance; acquisition time
Class Codes: B6150E (Multiple access communication); B6120B (Codes); B6250G (Satellite communication systems)

```
Set     Items   Description
S1       5653   (PN OR PSEUDORANDOM? OR PSUEDORANDOM? OR RANDOM?)(N)(CODE?
            OR SIGNAL? OR TRANSMISSION? OR TRANSMIT?)
S2     137919   (VARY? OR CHANG? OR MODIF? OR ALTER? OR REVIS? OR INCREAS?
            OR DECREAS?)(2N)(POWER? OR STRENGTH? OR AMPLITUDE?)
S3      54513   CRYPTO? OR ALGORITHM? OR CIPHER? OR CYPHER? OR ENCIPHER? OR
             ENCYPHER?
S4    1535910   ALGORITHM? OR FORMULA? OR CALCULAT? OR FORMULA?
S5         50   S1 AND S2
S6        206   S1 AND S3
S7        677   S1 AND S4
S8          5   S4 AND S5
S9          2   S5 AND S3
S10         1   S9 NOT S8
S11         2   PSEUDONOISE? AND S2
S12        50   S11 OR S5
S13         6   S12 AND IC=(G06F OR H04K OR H04L)
S14       258   S1 AND IC=H04K
S15        68   S14 AND (VARY? OR ALTER? OR CHANG? OR MODIF? OR REVIS? OR -
           INCREAS? OR DECREAS?)
S16        63   S15 NOT AD=20001128:20031128
S17        63   S16 NOT AD=20031128:20050901
S18        27   S17 AND (S3 OR S4 OR KEY OR KEYS_)
S19        28   S17 AND (S3 OR S4 OR KEY OR KEYS)
S20        28   S19 NOT (S8 OR S10 OR S13)
File 347:JAPIO Nov 1976-2005/Apr(Updated 050801)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200555
         (c) 2005  Thomson Derwent
```

8/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008091178 **Image available**
WPI Acc No: 1989-356290/198948
XRPX Acc No: N89-270913
Television signal scrambling system - has transition limiter, pseudo random signal generator combiner and transposer
Patent Assignee: HDS HOUSEHOLD DATA (HDSH-N)
Inventor: HANSEN H L; MORREY W T
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4870682	A	19890926	US 8718439	A	19870225	198948	B

Priority Applications (No Type Date): US 8718439 A 19870225
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4870682	A		9		

Abstract (Basic): US 4870682 A

The method involves steps of limiting **changes** in **amplitude** of an input clear signal then generating a first pseudo **random signal**. The limited input clear signal is transformed in accordance with the first pseudo **random signal** to produce a scrambled signal. The scrambled signal is transposed to reduce a bandwidth of a communication channel required for accurate transmission of the scrambled signal and then accurately transmitted.

A second pseudo **random signal** is generated, transforming a received transposed scrambled signal in accordance with the second pseudo **random signal** to produce a first descrambled signal, first descrambled signal is transposed to reverse the transposition of said scrambled signal to recover a final descrambled signal.

USE/ADVANTAGE - E.g. TV scrambling system, scrambled and unscrambled signal bandwidthing are equal, ciphering **algorithm** corrects signal errors caused by communication channel.

Title Terms: TELEVISION; SIGNAL; SCRAMBLE; SYSTEM; TRANSITION; LIMIT; PSEUDO; RANDOM; SIGNAL; GENERATOR; COMBINATION; TRANSPOSE
Derwent Class: W02
International Patent Class (Additional): H04B-001/66; H04L-009/02; H04N-007/16
File Segment: EPI

20/5/1 (Item 1 from file: 347)

05240235 **Image available**
DECODER

PUB. NO.: 08-195735 [JP 8195735 A]
PUBLISHED: July 30, 1996 (19960730)
INVENTOR(s): OI SHINICHI
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-005792 [JP 955792]
FILED: January 18, 1995 (19950118)
INTL CLASS: [6] **H04K-001/00** ; G09C-001/00; H04H-001/00; H04L-009/28
JAPIO CLASS: 44.2 (COMMUNICATION -- Transmission Systems); 34.4 (SPACE DEVELOPMENT -- Communication); 44.3 (COMMUNICATION -- Telegraphy); 44.5 (COMMUNICATION -- Radio Broadcasting); 44.9 (COMMUNICATION -- Other)
JAPIO KEYWORD: R131 (INFORMATION PROCESSING -- Microcomputers & Microprocessers)

ABSTRACT

PURPOSE: To keep secrecy by transiting a state sequentially from a state given by a scramble **key** and generating a **PN signal** based on a conversion logic from the state to be transited thereby making the logic **changeable** .

CONSTITUTION: Since a PN generator 310 **revises** a logic to generate a **PN signal** , the initial state of the generator 310 is transited sequentially based on PN information 210p when the PNG information 210p is available. A **PN signal** is given to a video descrambler 210a and an audio descrambler 210b based on the transition, from which descrambled video signal and audio signal are obtained. When PNG information 210p of an IC card 220 is given newly to the generator 310, the state transition is made different based on the new information 210p, a different **PN signal** is generated and descrambling is conducted based on the new **PN signal** . Since the logic for generating the **PN signal** is variable, the security is improved.

20/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

05207598 **Image available**
VOICE SCRAMBLER WITH EFFECT CONTROL FOR VOICE DATA COMPRESSION SYSTEM USING BAND SPLIT CODING

PUB. NO.: 08-163098 [JP 8163098 A]
PUBLISHED: June 21, 1996 (19960621)
INVENTOR(s): SATO REI
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 06-331387 [JP 94331387]
FILED: December 12, 1994 (19941212)
INTL CLASS: [6] **H04K-001/04** ; H03M-007/30
JAPIO CLASS: 44.2 (COMMUNICATION -- Transmission Systems); 34.4 (SPACE DEVELOPMENT -- Communication); 42.4 (ELECTRONICS -- Basic Circuits)

ABSTRACT

PURPOSE: To provide **ciphering** performance and to **increase** subscribers in the case of charging promotion in the device compressing voice data using band split coding utilizing a broadcast communication satellite.
CONSTITUTION: A transmitter side equipment is provided with a PN generator 8 generating a **PN signal** series based on an optional initial value and a **ciphering** device 10 **ciphering** the initial value and the **PN signal** series is added to at least one of voice data among voice data subject to band split and compression coding and the compression coded voice data and the **ciphered** initial value are synthesized and the synthesized data are sent, a receiver side equipment decodes the **ciphered** initial value and generates the **PN signal** series based on the decoded initial value to decode scrambled voice data.

20/5/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

05193623 **Image available**
INTERCEPTION PREVENTING METHOD, INTERCEPTION PREVENTING DEVICE AND **CIPHERING** /DECODING ADAPTOR WITH INTERCEPTION PREVENTING FUNCTION

PUB. NO.: 08-149123 [JP 8149123 A]
PUBLISHED: June 07, 1996 (19960607)
INVENTOR(s): NAKAYA KAZUHIKO
APPLICANT(s): RICOH ELEMEX CORP [360109] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 06-289902 [JP 94289902]
FILED: November 24, 1994 (19941124)
INTL CLASS: [6] H04L-009/00; H04L-009/10; H04L-009/12; **H04K-001/02** ; H04M-001/68; H04N-001/44
JAPIO CLASS: 44.3 (COMMUNICATION -- Telegraphy); 29.4 (PRECISION INSTRUMENTS -- Business Machines); 44.2 (COMMUNICATION -- Transmission Systems); 44.4 (COMMUNICATION -- Telephone); 44.7 (COMMUNICATION -- Facsimile)
JAPIO KEYWORD:R011 (LIQUID CRYSTALS)

ABSTRACT

PURPOSE: To prevent the interception of communication content by an electromagnetic wave leaked from a signal line based on a communication signal with comparatively simple configuration.

CONSTITUTION: A signal generating section 60 of its own station side **ciphering** / decoding adaptor 4 outputs a **random signal** at the same frequency band as that of a communication signal with its own station side facsimile equipment by **changing** the frequency of the **random signal** to a **random signal** line 32. Furthermore, the **random signal** line 32 starts from a signal line from a MODEM section 44 up to signal line and communication signal lines 24, 26 in a **changeover** section 42 and up to a connector 2a of the own station side facsimile equipment 2 along with the respective signal lines. Thus, even when the communication signal through the communication signal lines 24, 26 of a modular cable 14 is leaked as an electromagnetic wave, it is mixed with an electromagnetic wave of a **random signal** leaked from the **random signal** line 32, and an intercepting party cannot discriminate the signal from the **random signal** because the frequency band is the same and then the interception is failed.

20/5/9 (Item 9 from file: 347)
DIALOG(R)File 347:JAPIO

02117539 **Image available**
VOICE SCRAMBLING SYSTEM

PUB. NO.: 62-034439 [JP 62034439 A]
PUBLISHED: February 14, 1987 (19870214)
INVENTOR(s): KIMURA TAKESHI
KAWAI NAOKI
APPLICANT(s): NIPPON HOSO KYOKAI <NHK> [000435] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 60-172443 [JP 85172443]
FILED: August 07, 1985 (19850807)
INTL CLASS: [4] H04L-009/02; **H04K-001/02**
JAPIO CLASS: 44.3 (COMMUNICATION -- Telegraphy); 44.2 (COMMUNICATION -- Transmission Systems)
JOURNAL: Section: E, Section No. 522, Vol. 11, No. 212, Pg. 102, July 09, 1987 (19870709)

ABSTRACT

PURPOSE: To obtain a prescribed degree of secrecy, by specifying the duty ratio of a gate signal in accordance with **key** information and controlling a pseudo **random signal** in accordance with the gate signal.

CONSTITUTION: In order to control the time ratio of a **PN signal** to be added to a PCM voice signal, a gate signal which **changes** at every prescribed sample period is provided and the **PN signal** is added to the PCM signal after the **PN signal** is controlled in accordance with the gate signal. Then the time ratio (duty ratio) of the gate signal is controlled by means of separately transmitted **key** information and the degree of secrecy of scramble is controlled. When the gate signal is always '0', all samples are not scrambled and a 'no secrecy' condition is set. When the gate signal is always '1', all samples are scrambled and a 'secrecy is perfect' condition is set. Therefore, various degrees of secrecy can be obtained in accordance with the duty ratio of the gate signal.

20/5/13 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013083356
WPI Acc No: 2000-255228/200022
XRPX Acc No: N00-189643
Noise-proof method for transmitting and receiving wide-band signal using spectrum extension
Patent Assignee: KALUGIN V V (KALU-I); SMIRNOV V A (SMIR-I)
Inventor: KALUGIN V V; SMIRNOV V A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
RU 2127021	C1	19990227	RU 98111545	A	19980625	200022	B

Priority Applications (No Type Date): RU 98111545 A 19980625
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
RU 2127021	C1			H04B-001/62	

Abstract (Basic): RU 2127021 C1
NOVELTY - Method involves generation of signal for transmission, **alternation** of frequency characteristics of **pseudorandom signal** cycle Fpr according to given data, generation of **pseudorandom signal** , generation of phase signal with central frequency F0 and bandwidth , which is superimposed with digital **pseudorandom signal** . During receiving method involves filtration of this signal with superimposed narrow-band noise in bandwidth using filtration band , and converting it to voltage proportional to its power, filtering it in bandwidth , and **calculation** of mismatch between output signal cycle Fpr and corresponding clock frequency of receiver using correlation processing.
USE - Radio engineering.
ADVANTAGE - **Increased** stability to noise. 6 dwg pp; 0 DwgNo 0/0
Title Terms: NOISE; PROOF; METHOD; TRANSMIT; RECEIVE; WIDE; BAND; SIGNAL; SPECTRUM; EXTEND
Derwent Class: W01; W02
International Patent Class (Main): H04B-001/62
International Patent Class (Additional): **H04K-001/00**
File Segment: EPI

20/5/16 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011119961 **Image available**
WPI Acc No: 1997-097886/199709
Related WPI Acc No: 1997-097858; 1997-097889
XRPX Acc No: N97-081271

Decoder appts of scramble broadcast system e.g. TV using satellite - in which formation logic of PN generator is altered **based on PNG** alteration **information produced by specific data in sub information obtained by decoding received signal**

Patent Assignee: TOSHIBA KK (TOKE)
Inventor: SHIGIHARA H
Number of Countries: 003 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8336123	A	19961217	JP 95140758	A	19950607	199709 B
US 6067121	A	20000523	US 96659530	A	19960606	200032
CN 1141559	A	19970129	CN 96107938	A	19960607	200051

Priority Applications (No Type Date): JP 95140758 A 19950607; JP 95140756 A 19950607; JP 95140757 A 19950607
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8336123	A		10	H04N-007/16	
US 6067121	A			H04N-005/63	
CN 1141559	A			H04N-007/16	

Abstract (Basic): JP 8336123 A

The decoder appts uses **PN signal** with which scramble of video/audio signal is carried out transmitting station, and de-scrambles the received signal. A pair of decoders (210e,210f) decode the received **enciphered** information to extract a **key** information, which is **enciphered** with other sub information. A **key** information judging unit judges whether the extracted **key** information is a correct information. Then, the **key** information is passed to a PN generator (310) and a state transition is carried out orderly from the current state.

The **PN signal** is formed from this transition state, based on a conversion logic. The specific data in the sub information obtained by the decoders, is produced as a PNG **alteration** information. A **PN signal** formation logic **alteration** unit **alters** the formation logic of the PN generator, based on this **alteration** information.

ADVANTAGE - Improves safety to system security by simple **formulation** .

Dwg.1/10

Title Terms: DECODE; APPARATUS; SCRAMBLE; BROADCAST; SYSTEM; TELEVISION; SATELLITE; FORMATION; LOGIC; PN; GENERATOR; **ALTER** ; BASED; **ALTER** ; INFORMATION; PRODUCE; SPECIFIC; DATA; SUB; INFORMATION; OBTAIN; DECODE; RECEIVE; SIGNAL
Derwent Class: W02; W03
International Patent Class (Main): H04N-005/63; H04N-007/16
International Patent Class (Additional): **H04K-001/02** ; H04N-007/00; H04N-011/00
File Segment: EPI

20/5/25 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX

003903869
WPI Acc No: 1984-049414/198408
XRPX Acc No: N84-037484

Subscription TV signal encoding-decoding system - prevents unauthorised viewing of programme by using series analog delay elements to receive successive parts of composite video signal

Patent Assignee: MAAST INC (MAAS-N); TELEASE INC (TELE-N)
Inventor: FIELD R W; PERR C D
Number of Countries: 019 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 8400656	A	19840216	WO 83US1161	A	19830729	198408 B
AU 8318881	A	19840223				198419
EP 116082	A	19840822	EP 83902719	A	19830729	198434
US 4600942	A	19860715	US 84675452	A	19841127	198631
CA 1253616	A	19890502				198922
EP 116082	B	19910417				199116
DE 3382256	G	19910523				199122

Priority Applications (No Type Date): US 82403107 A 19820729
Cited Patents: EP 18783; EP 21928; EP 21938; GB 2067871; SSR870429; US 2961481; US 2972008; US 4070693; US 4333107; US 4405942
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 8400656	A	E	47		
Designated States (National): AU BR DK FI JP MC NO					
Designated States (Regional): AT BE CH DE FR GB LU NL SE					
EP 116082	A	E			
Designated States (Regional): AT BE CH DE FR GB LI LU NL SE					
EP 116082	B				
Designated States (Regional): AT BE CH DE FR GB LI LU NL SE					

Abstract (Basic): WO 8400656 A

The encoder-decoder has an odd number e.g. three, of analog delay elements, each of which delays the signal input by one half of the horizontal line scan period. The three delayed signals are input to a three-throw single-pole switch (54). The selection of which input terminal of the switch is connected to its output terminal is effected by a cycle sequence generator (56) connected with the three control input lines of the switch. By rearranging the video signal in an analog format the expense of digital conversion, prior to scrambling, is avoided.

The composite television signal supplied to the series of analog delay devices comprises both video and timing or synchronising data. The pseudo- **random signal** which controls the sequencing of the switch is generated independently at the transmitter and receiver, for greater security. A control word and an initialisation word are sent periodically with the TV signal to achieve synchronisation, one or both these words being encrypted prior to transmission. (47pp Dwg.No.4/10)

EP 116082 A

A method for enabling only authorised receivers to display a television program in an intelligible manner comprising the steps of: generating a television program signal (10); generating a psuedo-**random signal** at an encoding station (24); encrypting said television program signal in accordnace with said pseudo- **random signal** (18); producing a control signal related to the generation of said pseudo- **random signal** (24); transmitting the encrypted television program signal and said control signal to a receiver station (20); the method being characterised in that the pseudo- **random signal** has at least two different states and the television program signal is encrypted in accordance with the pseudo- **random signal** by

modifying the program signal in at least one of two modes of encryption operation, the method including the further steps of: providing a decode control **key** to the receiver station by transmitting said decode control **key** in an encrypted form (16,18,20); providing a master **key** to said receiver station for controlling the decryption of the transmitted decode control **key** ; decrypting the decode control **key** (42) and utilising said decrypted decode control **key** and said transmitted control signal to generate a pseudo- **random signal** at said receiving station (46); decoding the encrypted television program signal in accordance with the . pseudo- **random signal** generated at said receiver station (38); and applying the decoded program signal to a receiver for display.

(22pp

Title Terms: SUBSCRIBER; TELEVISION; SIGNAL; ENCODE; DECODE; SYSTEM; PREVENT; UNAUTHORISED; VIEW; PROGRAMME; SERIES; ANALOGUE; DELAY; ELEMENT; RECEIVE; SUCCESSION; PART; COMPOSITE; VIDEO; SIGNAL

Index Terms/Additional Words: SCRAMBLE

Derwent Class: W02

International Patent Class (Additional): **H04K-001/04** ; H04L-009/00; H04N-007/16

File Segment: EPI